BRITISH STANDARD SECTIONS

ISSUED BY

The Engineering Standards Committee.

SUPPORTED BY

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THE IRON AND STEEL INSTITUTE.
THE INSTITUTION OF ELECTRICAL ENGINEERS.

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LESLIE S. ROBERTSON, M.Inst.C.E.,
Secretary.

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List 1.

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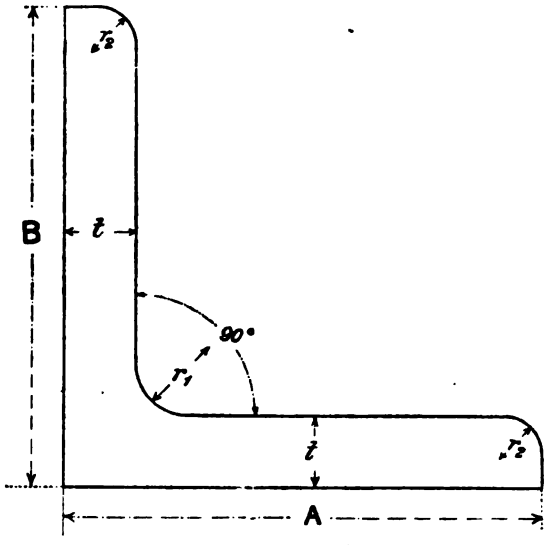
EQUAL ANGLES.



Size. A × B	Thickness at Correct Standard Profile. Minimum. t	Mean. t	Maximum. t	Minimum thickness rolled.	Maximum thickness rolled.	Radii. Root. r_1	Toe. r_2
Inches.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.
1 × 1	·125	—	·250	·125	·300	·175	·125
1¼ × 1¼	·125	—	·250	·125	·300	·200	·150
1½ × 1½	·125	—	·250	·125	·350	·200	·150
1¾ × 1¾	·175	—	·300	·175	·375	·225	·150
2 × 2	·175	—	·300	·175	·400	·250	·175
2¼ × 2¼	·175	—	·300	·175	·450	·250	·175
2½ × 2½	·250	·375	·500	·200	·500	·275	·200
2¾ × 2¾	·250	·375	·500	·225	·525	·275	·200
3 × 3	·250	·375	·500	·250	·525	·300	·200
3½ × 3½	·300	·425	·500	·275	·575	·325	·225
4 × 4	·300	·425	·500	·300	·625	·350	·250
4½ × 4½	·375	—	·500	·325	·650	·400	·275
5 × 5	·375	—	·500	·350	·700	·425	·300
6 × 6	·450	—	·625	·425	·775	·475	·325
7 × 7	·500	—	·675	·475	·850	·550	·375
8 × 8	·550	—	·750	·550	·950	·600	·425

Remarks.

The dimensions, thickness, and profile of Standard Angles shall be in accordance with the accompanying list and sketch. Angles ordered to the standard thickness shall be practically accurate in profile; but if the thickness is between, above, or below the standards, the flanges will be proportionately longer or shorter than the standards. The profile at the back of the toe will be slightly rounded when above the standards, instead of square; but the radii at the root and toe will remain unchanged. In Equal Sided Angles the thickness of the flanges will be the same.

Angles may be ordered by width of flanges and thickness. or by width of flanges and weight per foot, but not by both. The Committee suggests that all Angles be ordered by size of flanges and weight per foot.

A Table giving the Areas of sections in square inches, Weights per foot run, Moments of Inertia, etc., will be issued at a later date.

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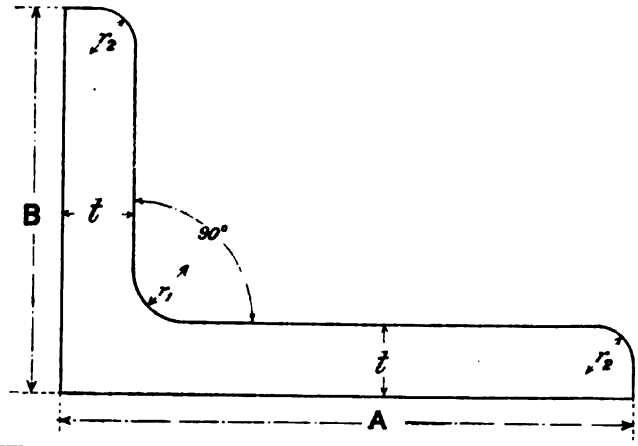
UNEQUAL ANGLES.



Size. A × B.	Thickness at Correct Standard Profile. Minimum t	Mean. t	Maximum t	Minimum thickness rolled.	Maximum thickness rolled.	Radii. Root. r_1	Toe. r_2	Remarks.
Inches.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	
1¼ × 1	·125	—	·250	·125	·300	·175	·125	The dimensions, thickness, and profile of Standard Angles shall be in accordance with the accompanying list and sketch. Angles ordered to the standard thickness shall be practically accurate in profile; but if the thickness is between, above, or below the standards, the flanges will be proportionately longer or shorter than the standards. The profile at the back of the toe will be slightly rounded when above the standards, instead of square; but the radii at the root and toe will remain unchanged.
1½ × 1¼	·125	—	·250	·125	·325	·200	·150	
1⅝ × 1½	·175	—	·300	·150	·350	·225	·150	
2 × 1½	·175	—	·300	·175	·375	·225	·150	
2½ × 2	·175	—	·300	·175	·450	·250	·175	
3 × 2	·250	·375	·500	·200	·500	·275	·200	
3 × 2½	·250	·375	·500	·225	·525	·275	·200	
3½ × 2½	·250	·375	·500	·250	·525	·300	·200	
3½ × 3	·250	·375	·500	·250	·550	·325	·225	
4 × 2½	·250	·375	·500	·250	·550	·325	·225	
4 × 3	·300	·425	·500	·275	·575	·325	·225	
4 × 3½	·300	·425	·500	·275	·600	·350	·250	
4½ × 3	·300	·425	·500	·275	·600	·350	·250	
4½ × 3½	·300	·425	·500	·300	·625	·350	·250	In Unequal Sided Angles the flanges may differ in thickness, but the difference up to and including 10 united inches shall not exceed ·05 inch, and over 10 united inches shall not exceed ·075 inch.
5 × 3	·300	·425	·500	·300	·625	·350	·250	
5 × 3½	·375	—	·500	·325	·625	·375	·250	
5 × 4	·375	—	·500	·325	·650	·400	·275	
5½ × 3	·375	—	·500	·325	·625	·375	·250	
5½ × 3½	·375	—	·500	·325	·650	·400	·275	
6 × 3½	·375	—	·500	·350	·675	·400	·275	Angles may be ordered by width of flanges and thickness, or by width of flanges and weight per foot, but not by both.
6 × 4	·375	—	·500	·350	·700	·425	·300	
6½ × 3½	·375	—	·500	·350	·700	·425	·300	
6½ × 4	—	·525	—	·375	·725	·425	·300	
6½ × 4½	—	·550	—	·400	·750	·450	·325	The Committee suggests that all Angles be ordered by size of flanges and weight per foot.
7 × 3½	—	·525	—	·375	·725	·425	·300	
7 × 4	—	·550	—	·400	·750	·450	·325	
8 × 3½	—	·575	—	·400	·750	·475	·325	A Table giving the Areas of sections in square inches, Weights per foot run, Moments of Inertia, etc., will be issued at a later date.
8 × 4	—	·625	—	·425	·775	·475	·325	
9 × 4	—	·650	—	·450	·825	·500	·350	
10 × 4	—	·675	—	·475	·850	·550	·375	

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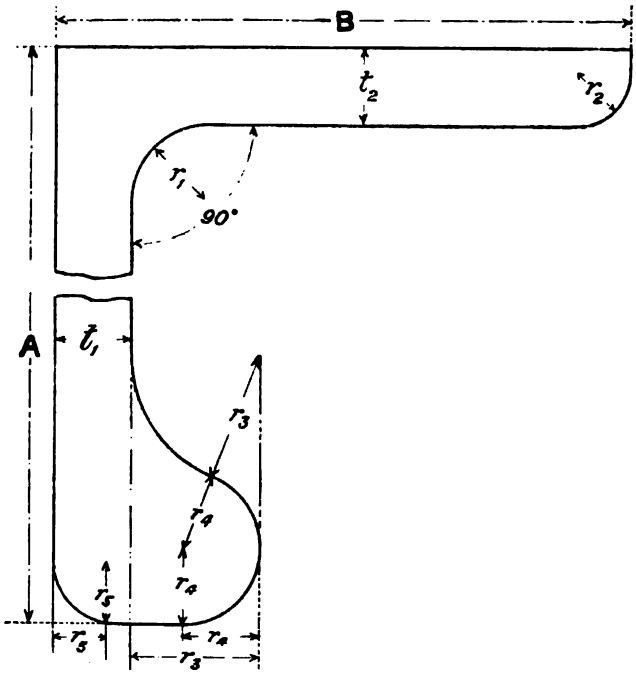
BULB ANGLES.



Size. A × B	Thickness at Correct Standard Profile. Web. t_1	Thickness at Correct Standard Profile. Flange. t_2	Web Thickness. Maximum rolled.	Web Thickness. Minimum rolled.	Radii. r_1	Radii. r_2	Radii. r_3	Radii. r_4	Radii. r_5
Inches.	Inch.		Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.
4 × 2½	·300		·500	·300	·300	·200	·525	·300	·250
5 × 2½	·325		·525	·325	·350	·250	·600	·350	·300
5½ × 3	·350		·550	·350	·375	·250	·650	·375	·325
6 × 3	·375		·575	·375	·400	·275	·675	·400	·325
6½ × 3	·375		·575	·375	·425	·275	·700	·425	·350
6½ × 3½	·400		·600	·400	·425	·275	·700	·425	·350
7 × 3	·400		·600	·400	·450	·300	·750	·450	·375
7 × 3½	·425		·625	·425	·450	·300	·750	·450	·375
7½ × 3	·425		·625	·425	·475	·325	·800	·475	·400
7½ × 3½	·425		·625	·425	·475	·325	·800	·475	·400
8 × 3	·425		·625	·425	·500	·325	·825	·500	·400
8 × 3½	·450		·650	·450	·500	·325	·825	·500	·400
8½ × 3	·450		·650	·450	·525	·350	·850	·525	·425
8½ × 3½	·475		·675	·475	·525	·350	·850	·525	·425
9 × 3	·475		·675	·475	·550	·350	·900	·550	·450
9 × 3½	·475		·675	·475	·550	·350	·900	·550	·450
9½ × 3½	·500		·700	·500	·550	·375	·950	·550	·475
10 × 3½	·525		·725	·525	·575	·400	·975	·575	·500
11 × 3½	·550		·750	·550	·625	·425	1·050	·625	·525
12 × 4	·600		·800	·600	·675	·450	1·125	·675	·550

Remarks.

The dimensions, thickness, and profile of Standard Bulb Angles shall be in accordance with the accompanying list and sketch.

Bulb Angles ordered to the standard thickness shall be practically accurate in profile; but if the thickness is greater than these standards, the width of the flange and bulb and depth of the web will be proportionately increased; instead of the profile being square at the back of the toe it will be slightly rounded, but the profile of the curves of the bulb and the radii at root and toe will remain the same; the flange and web will not be of the same thickness; generally, for each ·05 inch increase or decrease in the thickness of the web, the thickness of the flange will be increased or decreased ·025 inch; this difference will not be exceeded.

Bulb Angles may be ordered by depth of web, width of flange, and thickness, or by depth of web, width of flange, and weight per foot, but not by both thickness and weight per foot. The Committee suggests that all Bulb Angles be ordered by depth of web, width of flange, and weight per foot.

A Table giving the Areas of sections in square inches, Weights per foot run, Moments of Inertia, etc., will be issued at a later date.

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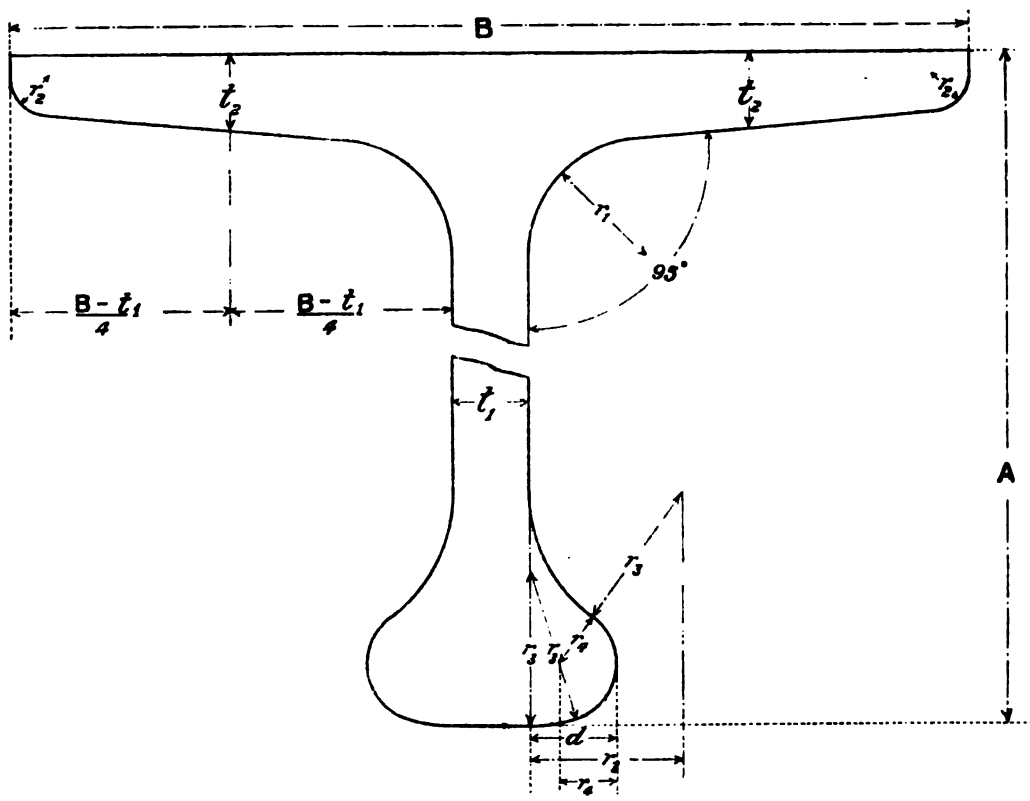
BULB TEES.



Size.	Thickness at correct Standard profile.		Web thickness.		Radii.					Remarks.
	Web.	Flange	Maximum rolled	Minimum rolled						
A × B	t_1	t_2			d	r_1	r_2	r_3	r_4	
Inches.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	
7 × 5	·425	·425	·500	·350	·450	·600	·200	·800	·300	
8 × 5½	·450	·450	·525	·375	·500	·675	·225	·900	·325	
9 × 5½	·475	·500	·550	·400	·575	·750	·250	1·000	·375	
10 × 6	·500	·550	·575	·425	·625	·825	·275	1·100	·400	
11 × 6½	·550	·600	·625	·475	·675	·900	·300	1·200	·450	
12 × 6½	·575	·650	·650	·500	·725	·975	·325	1·300	·475	

The dimensions, thickness, and profile of Standard Bulb Tees shall be in accordance with the accompanying list and sketch.

The standard thickness of flange shall be measured at a distance half-way between the extreme edges of the flanges and the nearer side of the web.

Bulb Tees ordered to the standard thickness shall be practically accurate in profile; but if the thickness is less or greater than these standards, the thickness of the web and widths of bulb and flange will be decreased or increased by the same amount; otherwise the profile will remain constant.

Bulb Tees may be ordered by depth and thickness of web, or by depth of web and weight per foot, but not by both.

The Committee suggests that Bulb Tees be ordered by depth of web and weight per foot.

A Table giving the Areas of sections in square inches, Weights per foot run, Moments of Inertia, etc., will be issued at a later date.

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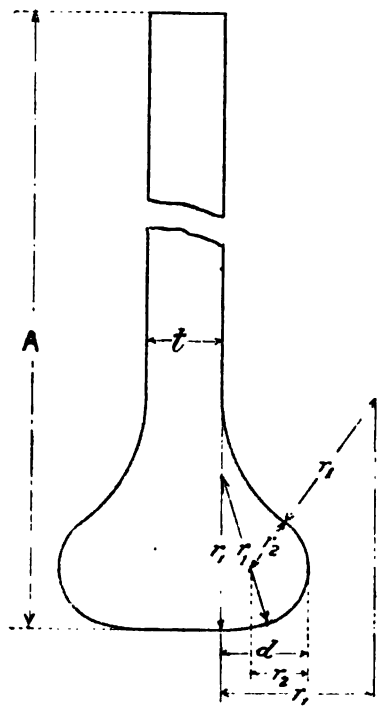
BULB PLATES.



Size.	Thickness at Correct Standard Profile.	Thickness.			Radii.		Remarks.
		Maximum rolled.	Minimum rolled.				
A	t			d	r_1	r_2	
Inches	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	
6	·300	·400	·250	·400	·700	·250	The depth of web, thickness and profile of Standard Bulb Plates shall be in accordance with the accompanying list and sketch. Bulb Plates ordered to the standard thickness will be practically accurate in profile; but if the thickness is less or greater than these standards, the thickness of the web and the width of the bulb will be decreased or increased by the same amount; otherwise the profile will remain constant.
7	·350	·450	·275	·450	·800	·300	
8	·400	·525	·325	·500	·900	·325	
9	·450	·575	·350	·575	1·000	·375	Bulb Plates may be ordered by depth and thickness of web, or by depth of web and weight per foot, but not by both.
10	·500	·625	·375	·625	1·100	·400	
11	·550	·700	·425	·675	1·200	·450	The Committee suggests that Bulb Plates be ordered by depth of web and weight per foot.
12	·600	·750	·450	·725	1·300	·475	A Table giving the Areas of sections in square inches, Weights per foot run, Moments of Inertia, etc., will be issued at a later date.

BRITISH STANDARD SECTIONS

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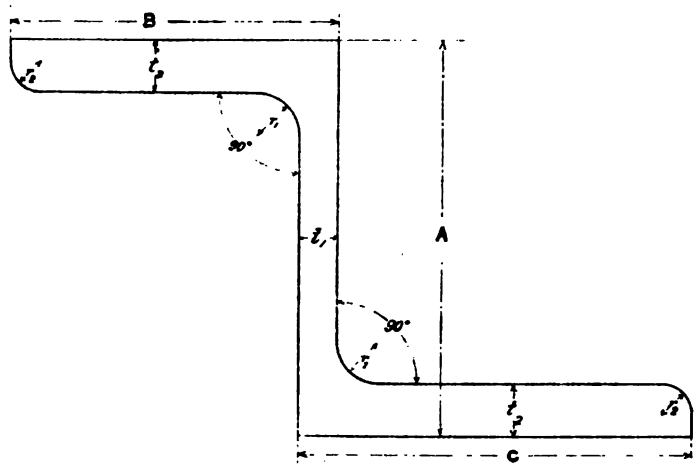
Z BARS.



Size.	Thickness at correct Standard Profile.		Web thickness.		Radii.		Remarks.
Web and flanges.	Web.	Flanges.	Maximum rolled.	Minimum rolled.	Root.	Toe.	
A × B × C	t_1	t_2			r_1	r_2	
Inches.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	
3 × 2½ × 3	·300	·400	·500	·300	·325	·225	The dimensions, thickness, and profile of Standard Zeds shall be in accordance with the accompanying list and sketch.
4 × 2½ × 3	·325	·425	·525	·325	·350	·225	Zed Bars ordered to the standard thickness shall be practically accurate in profile; but if the thickness is greater than these standards, the length of web and flanges will be proportionately increased. The profile at the back of the toe will be slightly rounded instead of square, but the radii at the root and toe will remain unchanged; the increase in thickness of flanges and web will not be the same; generally, for each ·05 inch increase in the thickness of the web, the flange will be increased ·025 inch; this difference will not be exceeded.
5 × 3 × 3	·350	·450	·550	·350	·375	·250	
6 × 3½ × 3½	·375	·475	·575	·375	·425	·300	
7 × 3½ × 3½	·400	·500	·600	·400	·450	·300	Zed Bars may be ordered by depth and thickness of web and width of flanges, or by depth of web, width of flanges, and weight per foot, but not by both. The Committee suggests that all Zed Bars be ordered by depth of web, width of flanges, and weight per foot.
8 × 3½ × 3½	·425	·525	·625	·425	·450	·325	
9 × 3½ × 3½	·450	·550	·650	·450	·475	·350	
10 × 3½ × 3½	·475	·575	·675	·475	·500	·350	A Table giving the Areas of sections in square inches, Weights per foot run, Moments of Inertia, etc., will be issued at a later date.

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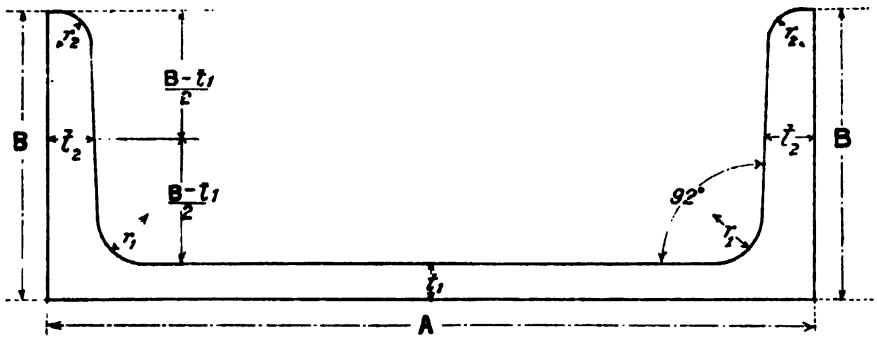
CHANNELS.



Size.	Thickness at correct Standard Profile.		Web thickness.		Radii.		Remarks.
Web and Flanges.	Web.	Flange.	Maximum rolled.	Minimum rolled.	Root.	Toe.	
A × B × B	t_1	t_2			r_1	r_2	
Inches.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	
3 × 1½ × 1½	·250	·312	—	—	·312	·220	
3½ × 2 × 2	·250	·312	—	—	·312	·220	
4 × 2 × 2	·250	·375	—	—	·375	·260	
5 × 2½ × 2½	·312	·375	—	—	·375	·260	
6 × 2½ × 2½	·312	·375	—	—	·375	·260	
6 × 3 × 3	·312	·437	—	—	·437	·300	
6 × 3 × 3	·375	·475	·575	·375	·475	·325	
6 × 3½ × 3½	·375	·475	·575	·375	·475	·325	
7 × 3 × 3	·375	·475	·575	·375	·475	·325	
7 × 3½ × 3½	·400	·500	·600	·400	·500	·350	
8 × 2½ × 2½	·312	·437	—	—	·437	·300	
8 × 3 × 3	·375	·500	—	—	·500	·350	
8 × 3½ × 3½	·425	·525	·625	·425	·525	·375	
8 × 4 × 4	·450	·550	·650	·450	·550	·375	
9 × 3 × 3	·375	·437	—	—	·437	·350	
9 × 3½ × 3½	·375	·500	—	—	·500	·350	
9 × 3½ × 3½	·450	·550	·650	·450	·550	·375	
9 × 4 × 4	·475	·575	·675	·475	·575	·400	
10 × 3½ × 3½	·375	·500	—	—	·500	·350	
10 × 3½ × 3½	·475	·575	·675	·475	·575	·400	
10 × 4 × 4	·475	·575	·675	·475	·575	·400	
11 × 3½ × 3½	·475	·575	·675	·475	·575	·400	
11 × 4 × 4	·500	·600	·700	·500	·600	·425	
12 × 3½ × 3½	·375	·500	—	—	·500	·350	
12 × 3½ × 3½	·500	·600	·700	·500	·600	·425	
12 × 4 × 4	·525	·625	·725	·525	·625	·425	
15 × 4 × 4	·525	·630	—	—	·630	·440	

The dimensions, thickness, and profile of Standard Channels shall be in accordance with the accompanying list and sketch. The standard thickness of flanges shall be measured at distances half-way between the extreme edges of the flanges and the nearer side of the web.

Channels ordered to the standard thickness shall be practically accurate in profile; but if the thickness is greater than these standards, the thickness of the web and the width of the flanges will be increased by the same amount; otherwise the profile will remain constant.

Channels may be ordered by depth and thickness of web and width of flanges, or by size of web and flanges and weight per foot, but not by both.

The Committee suggests that all Channels be ordered by size of web and flanges and weight per foot.

A Table giving the Areas of sections in square inches, Weights per foot run, Moments of Inertia, etc., will be issued at a later date.

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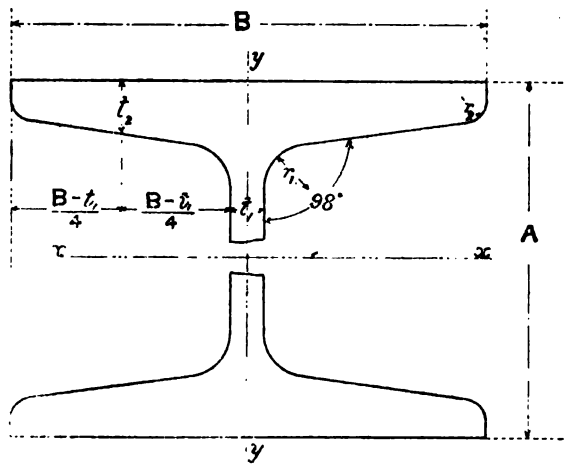
BEAMS.



Reference Mark.	Size. A × B.	Weight per foot.	Thickness at Correct Standard Profile. Web. t_1	Flange. t_2	Radii. Root. r_1	Toe. r_2
	Inches.	lbs.	Inch.	Inch.	Inch.	Inch.
B.S.B. 1	3 × 1½	4	·160	·248	·260	·130
B.S.B. 2	3 × 3	8·5	·200	·332	·300	·150
B.S.B. 3	4 × 1⅝	5	·170	·240	·270	·135
B.S.B. 4	4 × 3	9·5	·220	·336	·320	·160
B.S.B. 5	4⅜ × 1⅝	6·5	·180	·325	·280	·140
B.S.B. 6	5 × 3	11	·220	·376	·320	·160
B.S.B. 7	5 × 4½	18	·290	·448	·390	·195
B.S.B. 8	6 × 3	12	·260	·348	·360	·180
B.S.B. 9	6 × 4½	20	·370	·431	·470	·235
B.S.B.10	6 × 5	25	·410	·520	·510	·255
B.S.B.11	7 × 4	16	·250	·387	·350	·175
B.S.B.12	8 × 4	18	·280	·402	·380	·190
B.S.B.13	8 × 5	28	·350	·575	·450	·225
B.S.B.14	8 × 6	35	·440	·597	·540	·270
B.S.B.15	9 × 4	21	·300	·460	·400	·200
B.S.B.16	9 × 7	58	·550	·924	·650	·325
B.S.B.17	10 × 5	30	·360	·552	·460	·230
B.S.B.18	10 × 6	42	·400	·736	·500	·250
B.S.B.19	10 × 8	70	·600	·970	·700	·350
B.S.B.20	12 × 5	32	·350	·550	·450	·225
B.S.B.21	12 × 6	44	·400	·717	·500	·250
B.S.B.22	12 × 6	54	·500	·883	·600	·300
B.S.B.23	14 × 6	46	·400	·698	·500	·250
B.S.B.24	14 × 6	57	·500	·873	·600	·300
B.S.B.25	15 × 5	42	·420	·647	·520	·260
B.S.B.26	15 × 6	59	·500	·880	·600	·300
B.S.B.27	16 × 6	62	·550	·847	·650	·325
B.S.B.28	18 × 7	75	·550	·928	·650	·325
B.S.B.29	20 × 7½	89	·600	1·010	·700	·350
B.S.B.30	24 × 7½	100	·600	1·070	·700	·350

Remarks.

The dimensions, thickness, and profile of Standard Beams shall be in accordance with the accompanying list and sketch.

The standard thickness of flanges shall be measured at distances half-way between the extreme edges of the flanges and the nearer side of the web.

Beams ordered to the standard thickness shall be practically accurate in profile; but if the thickness of the web is less or greater than these standards, the width of the section will be decreased or increased by the same amount; otherwise the profile will remain constant.

Beams may be ordered by depth of section, width of flanges, and thickness, or by depth of section, width of flanges, and weight per foot, but not by both thickness and weight per foot.

The Committee suggests that all Beams be ordered by depth of section, width of flanges, and weight per foot.

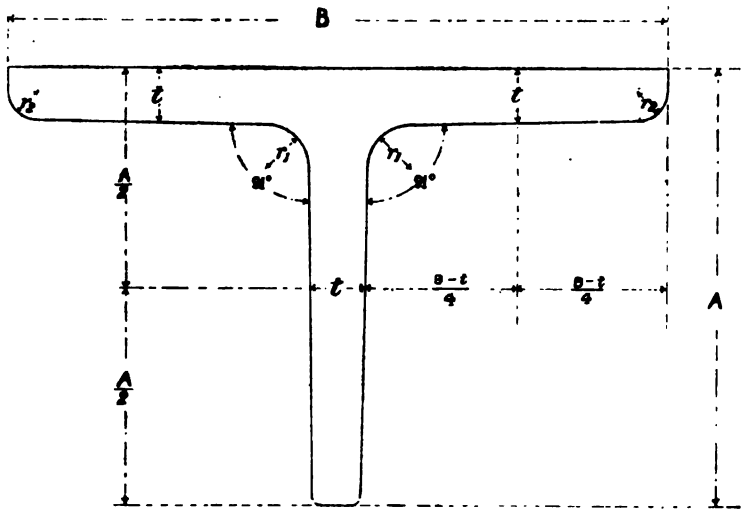
A Table giving the Areas of sections in square inches, Moments of Inertia, etc., will be issued at a later date.

BRITISH STANDARD SECTIONS

ISSUED BY

The Engineering Standards Committee.

T BARS.



Flange.	Web.	Thicknesses at Correct Standard Profile.			Radii.		Remarks.
					Root.	Toe.	
B	A	t	t	t	r_1	r_2	
Inches.	Inches.	Inch.	Inch.	Inch.			
1	1	·125	·187	—	·175	·125	
1¼	1¼	·125	·187	—	·200	·150	
1½	1½	·187	·250	—	·200	·150	
1⅝	1⅝	·187	·250	—	·225	·150	
1½	2	·250	·312	—	·225	·150	
2	2	·250	·312	·375	·250	·175	
2¼	2¼	·250	·312	·375	·250	·175	
2½	2½	·250	·312	·375	·275	·200	
3	2	·312	·375	—	·275	·200	
3	2½	·312	·375	—	·275	·200	
3	3	·312	·375	·437	·300	·200	
3	4	·375	·500	—	·325	·225	
3½	3½	·375	·437	·500	·325	·225	
4	3	·375	·500	—	·325	·225	
4	4	·375	·500	—	·350	·250	
4	5	·375	·500	—	·400	·275	
5	3	·375	·500	—	·350	·250	
5	3½	·500	—	—	·375	·250	
5	4	·500	—	—	·400	·275	
6	3	·375	·500	—	·400	·275	
6	4	·500	—	—	·425	·300	
7	3½	·500	—	—	·425	·300	

The dimensions, thickness, and profile of Standard Tees shall be in accordance with the accompanying list and sketch.

The standard thickness of stem shall be at a distance half-way between the extreme edge of the stem and the farther side of the flange.

The standard thickness of flange shall be measured at a distance half-way between the extreme edge of the flange and the nearer side of the stem.

Tees ordered to the standard thickness shall be practically accurate in profile.

Tees may be ordered by width of flange, depth of section, and thickness, or by width of flange, depth of section, and weight per foot, but not by both thickness and weight per foot. The Committee suggests that all Tees be ordered by width of flange, depth of section, and weight per foot.

The taper of 1° to be divided equally between the web and flange.

A Table giving the Areas of sections in square inches, Weights per foot run, Moments of Inertia, etc., will be issued at a later date.